

REMARKS

The Office Action in rejecting the single independent claim 7 states that Kompanek discloses in Fig. 5 an acoustic projector comprising an even number (6) of longitudinally joined cylindrical shell segments (10a-10f), and an even number (element 10 in Fig. 1) of spaced drivers mounted within each of the shell segments.

Fig. 5 shows an electroacoustical transducer having six shell segments which are longitudinally joined wherein each of the six transducers 10a-10f is the transducer of Figs. 1 and 2 (see Column 4, lines 60-68). However, the transducer of Fig. 1 has a single shell 12 with a plurality of driver segments 16 (not individual drivers) mounted therein forming a single driver or transducer.

It is respectfully submitted that there is not an even number of spaced drivers in the single shell as shown in Fig. 1 as alleged by the Examiner. There is only a single driver (uneven) formed by a plurality of driver segments. This is clearly shown in Fig. 1 where each of the segments 16 includes a negative end and a positive end wherein all of the positive ends (plus terminals) are joined as shown by the innermost circle of Fig. 1, with the negative ends (negative terminals) being joined as shown by the outer circular line in Fig. 1.

The Specification states that the transducer 10 (singular transducer) includes a tubular member 12 with a gap 14 (Column 2, lines 59-62), and most importantly in Column 3 beginning at line 4 states that: "A plurality of sectionalized transducer elements 16 are arrayed within the member 12 in abutting and progress relationship to one another and in abutting relationship to the inner wall of the member 12." Furthermore, Specification Column 3, lines 55-59 states that: "In addition, the use of sectionalizing elements 16 inhibits any cracking of the transducer member formed by such elements even when the elements are subjected to a considerable amount of electrical energy." Column 5, beginning at line 28 through line 38, further describes that each transducer includes ten ceramic elements which are bonded together to form the transducer. This feature also is set forth in the claims. For example, Claim 1, Column 6, beginning at line 3 specifies that a transducer (single) is formed from a plurality of polarized sectional

elements within the split ring and that each of the sectionalized elements in the transducer engages the inner surface of the ring etc.

Thus, clearly throughout the Specification and claims, and as shown in Fig. 1, there is not an even number of drivers (transducers) within shell 10 of Fig. 1, but a single driver or transducer formed by a plurality of circumferentially spaced elements 16 which are polarized "circumferentially" as set forth in Column 3, lines 20-22. Such a construction does not suggest or render obvious the formation of an acoustic projector as now defined in claim 7 wherein an even number of longitudinally spaced cylindrical shell segments each have an even number of drivers in a longitudinally spaced relationship from the adjacent drivers. The use of a plurality of circumferentially spaced driver segments would not suggest a plurality of longitudinally spaced drivers as now defined in amended claim 7. Accordingly, it is respectfully submitted that claim 7 patentably defines over the Kompanek '044 patent.

The Office Action furthermore rejects claim 7, in addition to many of the dependent claims, under 35 USC 103(a) as being unpatentable over Flanagan (5,220,538) in view of Kompanek. Flanagan discloses a similar driver construction to that of Kompanek in that it shows a single transducer formed by a plurality of individual segments 18 (see Column 4, lines 14-25). These segments are spaced circumferentially with respect to each other and are not individual drivers spaced longitudinally with respect to each other in each of the shell segments as set forth in claim 7. Thus, Flanagan teaches the same type of single transducer as that taught by Kompanek and does not disclose in any manner the use of a plurality of drivers, an even number of which are spaced longitudinally from each other within each shell segment.

The Office Action, page 3, paragraph 4, states that it would be obvious to modify Flanagan by utilizing an even number of cylindrical shell segments joined together as taught by Kompanek to provide a sonar projector that increases the power at high efficiency and controlled frequencies. However, if such a combination was made, it would merely show an even number of cylindrical shell segments joined together wherein each of the shell segments includes a plurality

of polarized circumferentially arranged sectional elements as clearly shown in both Kompanek and Flanagan and not an even number of individual drivers which are in a longitudinally spaced relationship from adjacent drivers in each of the shell segments as now set forth in amended claim 1. Again, Applicant provides an even number of spaced drivers in each of the even number of longitudinally joined cylindrical shell segments, wherein each of the drivers in each of the shell segments is in a longitudinally spaced relationship from the adjacent driver. Again, Kompanek and Flanagan both show a single transducer formed by a plurality of circumferentially arranged driver segments which together form a single driver. Such a construction is completely different from that as now defined in amended claim 7.

The Office Action furthermore states that neither of the references show the combined length of the drivers being between 70% and 90% of the longitudinal length of the shell segment and that such is a matter of design choice that one of ordinary skill would find obvious. Such a relationship is not shown or suggested in any manner in either of the cited references, nor is there any reason given why such a combined length would be obvious.

New claim 16 specifies that the acoustic projector of claim 7 is formed of two shell segments which are longitudinally joined, with each of the shell segments containing two longitudinally spaced drivers. This is the preferred embodiment which is clearly shown in the drawings and described in the Specification (see Fig. 3) wherein embodiment 22 consists of a pair of shell segments 8 with each segment 8 containing a pair of drivers 10. Again, Kompanek nor Flanagan individually or when combined show such a preferred construction.

Osborn (6,643,222) was cited merely to show that the shell material could be formed of a graphite epoxy composite material as set forth in claim 9. However, Osborn in no way shows or suggests the particular acoustic projector construction as set forth in claim 7 from which claim 9 depends.

In view of the above discussion and the amendment to claim 7 which clearly defines an acoustic projector completely different in construction from that of Kompanek and Flanagan individually, and if even combined is not disclosed. In

view of the above amendment to claim 7, it is respectfully submitted that claim 7 and claims 9-17 depended therefrom patentably define over the cited references and are in condition for allowance and action to that affect is respectfully requested. It is furthermore respectfully requested that should the Examiner have any questions regarding the above or wish to discuss this matter in further detail that he phone the undersigned with the expectation that a satisfactory solution can be reached to place the claims in condition for allowance.

Respectfully submitted this 3rd day of January, 2007.

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